NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

Early Successional Habitat Development/Management

(acre)

Code 647

DEFINITION

Manage early plant succession to benefit desired wildlife or natural communities.

PURPOSES

- Increase plant community diversity.
- Provide terrestrial wildlife or aquatic habitat for early successional species.
- Provide habitat for declining species.

CONDITIONS WHERE PRACTICE APPLIES

On all lands that are suitable for the kinds of wildlife and plant species that are desired.

CRITERIA - General criteria applicable to all purposes.

All planned work shall comply with federal, state, and local laws and regulations.

Habitat shall be managed so that soil loss does not exceed tolerable limits.

When this standard is being applied to grassland habitats, one or more of the following practices shall be used to meet the intended purposes:

- Strip Disking
- Strip Spraying
- Strip Mowing
- Prescribed Burning
- Prescribed Grazing

When this standard is being applied to woodland habitats, one or more of the following practices shall be used to meet the intended purposes:

- Woodland Edge Feathering
- Forest Regeneration Opening

Strip Disking

Management practices and activities shall not disturb cover during the primary nesting period for grassland species of March 1 through July 15.

Maximum plant and animal diversity shall be accomplished at the time of practice establishment by providing 40% – 70% bare soil, equally distributed throughout the area of disturbance.

1. Strips shall be no wider than 50 feet.
2. Alternate strips with undisturbed strips 3-4 times the effected strip width across the field on the contour or cross-slope.
3. Strips shall parallel brushy or woody escape cover when feasible.
4. Rotate the strips across the field.

A filter strip shall be left adjacent to all water bodies to maintain water quality. See Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) Standard 393 - Filter Strip for additional guidance.

Strip Spraying

Management practices and activities shall not disturb cover during the primary nesting period for grassland species of March 1 through July 15.

1. Strips shall be no wider than 50 feet.
2. Alternate strips with undisturbed strips 3-4 times the effected strip width across the field on the contour or cross-slope.
3. Strips shall parallel brushy or woody escape cover when feasible.
4. Rotate the strips across the field.

A filter strip shall be left adjacent to all water bodies to maintain water quality. See NRCS FOTG Standard 393 - Filter Strip for additional guidance.

Strip Mowing

Management practices and activities shall not disturb cover during the primary nesting period for grassland species of March 1 through July 15.

Strip Mowing shall be used exclusively to control woody vegetation or to stress warm season grasses.

Rotate fields through a 4-year mowing cycle.

Cool season grasses shall be mowed no shorter than 6 inches.

Native warm season grasses shall be mowed shorter than 6 inches to help thin a thick stand and encourage legume/forb establishment.

Prescribed Burning

If prescribed burning is used during the primary nesting period for grassland species (March 1 through July 15), no more than 1/2 of the grassland acreage shall be impacted during any one growing season.

See NRCS FOTG Standard 338 - Prescribed Burning for additional guidance.

Prescribed Grazing

If prescribed grazing is used during the primary nesting period for grassland species (March 1 through July 15), no more than 1/2 of the grassland acreage shall be impacted during any one growing season. See NRCS FOTG Standard 528A – Prescribed Grazing for additional guidance.

Woodland Edge Feathering

The removal of woody vegetation shall not occur from April 1 through July 30 to avoid the accidental taking of the endangered Indiana Bat (*Myotis sodalis*).

A feathered edge (up to 50 feet in width) shall be created within the woodland perimeter of the site.

At the time of practice establishment:

- Control all woody vegetation greater than 4 inches DBH (diameter breast height), and/or woody vegetation greater than 12 feet tall within the practice area.
- Species greater than 10 inches in diameter (measured at 12 inches off the ground), and capable of coppice regeneration, shall be cut at ground level, or no higher than 10 inches off the ground. See Table 1 for species capable of coppice regeneration.
- Allow fruit bearing shrubs and small trees to grow.
- Cut and treat all vines with herbicides that are labeled for this practice.

Woody vegetation shall be controlled by using one or more of the following methods:

- Mechanical: Including hand cutting, shearing, hydro-axe, disking, and other approved techniques.
- Chemical: Including broadcast, spot, cut-stem treatments, or basal spraying.

Table 1 - **Species capable of coppice regeneration**

Common Name	Scientific Name	Growth Form	Note
Ash, Green	Fraxinus pennsylvanica	Tree	
Ash, White	Fraxinus americana	Tree	
Basswood	Tilia americana	Tree	
Black Cherry	Prunus serotina	Tree	
Black Walnut	Juglans nigra	Tree	
Blackgum	Nyssa slyvatica	Tree	1
Blackhaw	Viburnum prunifolium	Shrub	
Boxelder	Acer negundo	Tree	
Cottonwood, Eastern	Populus deltoides	Tree	
Dogwood, Red-Osier	Cornus stolonifera	Shrub	
Dogwood, Roughleaf	Cornus drummondi	Shrub	
Dogwood, Silky	Cornus amomum	Shrub	
Elm, Red	Ulmus rubra	Tree	
Hackberry	Celtis occidentalis	Tree	1
Hickory, Bitternut	Carya cordiformis	Tree	
Hickory, Mockernut	Carya tomentosa	Tree	
Hickory, Pignut	Carya glabra	Tree	
Hickory, Shagbark	Carya ovata	Tree	
Hickory, Shellbark	Carya laciniosa	Tree	
Hornbean, American	Ostrya virginiana	Tree	
Locust, Black	Robina pseudoacacia	Tree	
Locust, Honey	Gleditsia triacanthos	Tree	
Maple, Red	Acer rubrum	Tree	
Maple, Siver	Acer saccharinum	Tree	
Maple, Sugar	Acer saccharum	Tree	
Oak, Black	Quercus velutina	Tree	
Oak, Bur	Quercus macrocarpa	Tree	
Oak, Chinkapin	Quercus muehlenbergii	Tree	
Oak, Pin	Quesrcus palustris	Tree	
Oak, Red	Quercus rubra	Tree	
Oak, Scarlet	Quercus coccinea	Tree	
Oak, Swamp Chestnut	Quecus michauxii	Tree	
Oak, Swamp White	Quercus bicolor	Tree	1
Oak, White	Quercus alba	Tree	1
Pawpaw	Asimina triloba	Small Tree	
Persimmon	Diospyros virginiana	Tree	
Sassafras	Sassafras albidum	Tree	
Sweetgum	Liquidambar styraciflua	Tree	
Sycamore, American	Plantanus occidentalis	Tree	
Willow, Black	Salix nigra	Tree	
Yellow-Poplar	Liriodendron tulipifera	Tree	

1 - Poor sprouting from trees greater than 14 in DBH

Forest Regeneration Opening

The removal of woody vegetation shall not occur from April 1 through July 30 to avoid the accidental taking of the endangered Indiana Bat (*Myotis sodalis*).

This component shall be used to construct new regeneration openings or to maintain existing regeneration openings in forested areas to improve habitat for species that utilize and benefit from early successional forest stages.

The location, size and orientation of regeneration openings shall be designed to achieve the desired purpose.

At the time of practice establishment:

- Control all woody vegetation greater than 4 inches DBH (diameter breast height), and/or woody vegetation greater than 12 feet tall within the practice area.
- Species greater than 10 inches in diameter (measured at 12 inches off the ground), and capable of coppice regeneration, shall be cut at ground level, or no higher than 10 inches off the ground. See Table 1 for species capable of coppice regeneration.
- Allow fruit bearing shrubs and small trees to grow.
- Cut and treat all vines to prevent regrowth with appropriate methods.

Woody vegetation shall be controlled by using one or more of the following methods:

- Mechanical: Including hand cutting, shearing, hydro-axe, disking, and other approved techniques.
- Chemical: Including broadcast, spot, cut-stem treatments, or basal spraying.

CONSIDERATIONS

General

Consider treatments whenever plant growth has gone past the desired successional stages.

Consider managing for early successional plant communities which are beneficial, if not essential, for less mobile animal species. The less mobile the species, the more important it is to provide all of the habitat requirements in a small area.

Consider the use of this practice to promote the conservation of declining species, including threatened and endangered species.

Consider requesting technical assistance from a NRCS biologist, IDNR Division of Fish and Wildlife's District Biologist, or U.S. Fish and Wildlife Service (FWS) Biologist.

Grasslands

Consider delaying management practices until after August 15 to reduce the chance of harming fledgling birds and young wildlife.

Consider rotating early successional treatments throughout the managed area.

Consider the use of this standard to maintain brood-rearing habitat for bobwhite quail, ring-necked pheasant, and wild turkey.

Consider the use of this standard to maintain nesting habitat for grassland songbirds and other ground-nesting wildlife.

Consider the use of Strip Disking, Strip Spraying, Prescribed Fire or Prescribed Grazing to increase the amount of open ground and encourage a diverse plant community of annuals and perennial plants where vegetation, such as in old pastures and abandoned areas, has become too thick for early successional grassland wildlife species to use.

Consider the type of farm machinery and the needed maintenance practices, such as firebreaks, for future access and maintenance. See NRCS FOTG Standard 394 - Firebrea*k* for design criteria. Whenever possible, lay out strips to have some multiple or full width passes by all farm implements.

Consider planting disked or sprayed strips to an annual grain or grain mix. See NRCS FOTG Standard 645 - Upland Wildlife Habitat Management for food plot criteria.

Consider the potential negative impact of unintentionally establishing undesirable invasive species (such as wild parsnip, black mustard, quack grass, etc.) when applying early successional practices.

Consider using NRCS FOTG Standard 338 - Prescribed Burning to allow germination of seed bearing annuals, increase plant species diversity, control unwanted woody cover, and open up the stand for movement of small animals and birds.

Consider the potential negative effects of reduced plant diversity and reduced residual nesting cover for early successional grassland species that may result from annual mowing.

Consider mowing from the center of the field outward. This will allow wildlife the opportunity to seek cover in adjacent areas.

When mowing cool season grasses to control woody invasion, consider leaving more than 6 inches of standing vegetation to provide greater residual brood rearing and roosting habitat height.

Consider the timing of mowing to allow for residual plant growth prior to winter dormancy.

Woodlands

When using Woodland Edge Feathering adjacent to field edges, consider the use of NRCS FOTG 645 – Upland Wildlife Habitat Development to establish additional wildlife habitat in the adjacent field.

Consider using Woodland Edge Feathering to create dense, shrubby habitat for bobwhite quail, ruffed grouse and rabbits.

Consider using Woodland Edge Feathering around the perimeter of permanent forest openings and along the edges of permanent forest trails to minimize abrupt changes in habitat types and provide additional habitat for early successional wildlife species.

Consider the re-application of Woodland Edge Feathering when trees in the woodland edge become large enough to shade more than 60 percent of the area.

Consider the creation of regeneration openings to encourage the regeneration of shade intolerant tree species such as oaks, or to regenerate thick stem density of pioneering tree species that provide habitat for early successional forest wildlife species, such as Ruffed Grouse, Woodcock, Blue-winged Warblers, and Great-creasted Flycatchers.

Consider developing regeneration openings on south facing slopes that are more prone to regenerate shade-intolerant tree species.

In the year prior to creating forest regeneration openings, consider conducting the cutting and treatment of vines.

Consider creating a number of small, scattered regeneration openings within the forested area, rather than a single large opening of comparable size, to benefit a variety of early successional wildlife other than game species.

When creating regeneration openings, consider that the recommended size of the openings may vary by species requirements, and that forest regeneration openings generally range from 0.5 acre to 5 acres, with openings of 1 to 3 acres being typical.

When conducting Woodland Edge Feathering or Regeneration Opening practices, consider that maximum re-growth of coppiced trees will be achieved when cut during the dormant season (October - March).

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation.

List the early successional species and life history stage for which the habitat is being managed.

OPERATION AND MAINTENANCE

A plan for operation and maintenance of early successional habitat at a minimum shall include monitoring and management of vegetative measures. Actions shall be carried out to ensure these practices function as intended throughout their expected lives. These actions include normal repetitive activities in the application and use of the practice (operation) such as prescribed fire, disking, or mowing, and repair and upkeep of the practice (maintenance) such as replacement of vegetative component as needed.

Spraying or other control of noxious plants shall be done on a "spot" basis to protect forbs and legumes that benefit native pollinators and other wildlife.

When mowing to control invasive species and noxious weeds, "spot" mow only those portions of the field with problem weeds, leaving the remaining areas undisturbed.

Manage habitat elements in proper amounts and locations to benefit desired wildlife species.

The use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this standard.

REFERENCES

Conservation Mowing, Quail Unlimited, Inc., 1994 (20 minute video).

Forest Openings, Habitat Management Fact Sheet, Indiana Department of Natural Resources, Division of Fish and Wildlife, October 2002.

Private Lands Wildlife Management: A Technical Guidance Manual and Correspondence Course, The Kentucky Cooperative Extension Service, University of Kentucky, Lexington, KY, 1992.

Managing Michigan's Wildlife: A Landowner's Guide, The Private Land Working Group, Lansing, MI, 1999.

Rabbit and Quail Management, Management Series No. 21, Indiana Department of Natural Resources, Division of Fish and Wildlife.

Silvics of North America: Volume 2. Hardwoods, Agriculture Handbook 654, USDA Forest Service, December 1990.